

WHAT IS CLAIMED IS:

1. A plastic sheet product having a matte finish comprising a core layer of a
5 first thermoplastic polymer and at least one layer of a capstock composition overlying
and bonded to at least one face of the core layer, said capstock composition
comprising a second thermoplastic polymer having a refractive index and containing a
plurality of discrete particles immiscible with, and dispersed in, the second
thermoplastic polymer and having a refractive index, wherein the refractive index of
10 the particles differs from the refractive index of the second thermoplastic polymer.

2. The plastic sheet product of claim 1 wherein the first thermoplastic
polymer and the second thermoplastic polymer are independently selected from the
group consisting of polyethylenes, polypropylenes, ethylene-propylene copolymers,
15 ethylene-vinyl acetate copolymers, ethylene-methyl acrylate copolymers, ethylene-
ethyl acrylate copolymers, ethylene-methyl methacrylate copolymers,
ethylene-vinyl acetate-methyl methacrylate copolymers, polyvinyl chloride,
acrylonitrile-styrene copolymers, polystyrenes, styrene-methylmethacrylate
copolymers, polyethyl acrylates, polymethyl-methacrylates, methylmethacrylate-
20 methylacrylate copolymers, polyethylene terephthalates, polyamides, polycarbonates,
polyurethanes and silicone resins.

3. The plastic sheet product of claim 1 wherein the first thermoplastic
polymer and the second thermoplastic polymer are transparent.
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4. The plastic sheet product of claim 1 wherein the second thermoplastic
polymer is the same as the first thermoplastic polymer.

5. The plastic product of claim 1 wherein the second and the first
30 thermoplastic polymer comprise a methyl methacrylate-methyl acrylate copolymer.

6 5. The plastic sheet product of claim 4 wherein the copolymer comprises about 80 to about 98 wt.% methyl methacrylate and about 2 to about 20 wt.% methyl acrylate.

5 7 6. The plastic sheet product of claim 5 wherein the copolymer comprises 93 to 97 wt.% methyl methacrylate and 3 to 7 wt.% methyl acrylate.

2 layers 8 7. The plastic sheet product of claim 1 wherein the capstock composition is bonded to only one face of the core layer.

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3 layers 9 8. The plastic sheet product of claim 1 wherein the capstock composition is bonded to both faces of the core layer.

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10 9. The plastic sheet product of claim 1 wherein the first and second thermoplastic polymers have weight average molecular weights in the range of about 100,000 to about 175,000.

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11 10. The plastic sheet product of claim 9 wherein the first and second thermoplastic polymers have weight average molecular weights in the range of 125,000 to 150,000.

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12 11. The plastic sheet product of claim 1 wherein the core layer has a thickness of about 2 to about 13 mm and said at least one capstock layer has a thickness of about 10 to about 400 microns.

13 12. The plastic sheet product of claim 11 wherein the core layer has a thickness of 4 to 10 mm and said at least one capstock layer has a thickness of 150 to 300 microns.

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14 13. The plastic sheet product of claim 1 wherein the particles have particle size diameters in the range of about 1 micron to about 60 microns.

15 14. The plastic sheet product of claim 13 wherein the particles have particle size diameters in the range of 30 to 50 microns.

16 15. The plastic sheet product of claim 1 wherein the particles are dispersed in the second thermoplastic polymer in an amount of about 4 to about 30 wt.%.
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17 16. The plastic sheet product of claim 15 wherein the particles are dispersed in the second thermoplastic polymer in an amount of 22 to 26 wt.%.
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18 17. The plastic sheet product of claim 1 wherein the refractive indices of the particles and the second thermoplastic polymer are in the range of about 1.40 to about 1.65.
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19 18. The plastic sheet product of claim 17 wherein the refractive indices of the particles and the second thermoplastic polymer are in the range of 1.49 to 1.55.
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20 19. The plastic sheet product of claim 1 wherein the refractive index of the particles differs from the refractive index of the second thermoplastic polymer by a value in the range of about 0.001 to about 0.030.
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21 20. The plastic sheet product of claim 19 wherein the refractive index of the particles differs from the refractive index of the second thermoplastic polymer by a value in the range of 0.005 to 0.020.
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22 21. The plastic sheet product of claim 1 wherein the particles are comprised of a polymer or a pigment.

23 22. The plastic sheet product of claim 21 wherein the particles are comprised of a polymer selected from the group consisting of crosslinked polymethylmethacrylate, crosslinked polymethylmethacrylate modified with an acrylate or methacrylate monomer, crosslinked copolymers of methylmethacrylate and styrene, silicone resins and polyallyl methacrylates.
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24 23. The plastic sheet product of claim 21 wherein the pigment is selected from the group consisting of barium sulfate, silicon dioxide, aluminum oxide, aluminum hydroxide and calcium carbonate.

5 25 24. The plastic sheet product of Claim 1 wherein plastic sheet is formed by feedblock coextrusion of the core layer and the capstock composition.

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